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OPTIMIZING OPERATIONS IN A GST ERA: CHALLENGES AND OPPORTUNITIES FOR PHARMACEUTICAL MANUFACTURERS

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ABSTRACT

With the introduction of the Goods and Services Tax (GST) on July 1, 2017, India's tax structure underwent a dramatic transformation that resulted in the combination of multiple indirect taxes into a single, comprehensive tax. The pharmaceutical sector in India, which is the third largest in the world by volume and the fifteenth by value, is the subject of this study's operational analysis about the effects of GST. Analysing the difficulties and chances that GST presents for streamlining operations in the pharmaceutical manufacturing sector is the main goal. The study looks into how the GST affects working capital management, supply chain logistics, tax compliance, and overall operational efficiency using a qualitative multiple-case study technique. Important conclusions show that while the Goods and Services Tax (GST) has simplified the tax system and lessened the total tax burden on pharmaceutical sproducts, it has also brought up new difficulties, including higher compliance costs and supply chain disruptions. The study finds moderating factors that affect the relationship between the adoption of the Goods and Services Tax (GST) and operational outcomes. These factors include company size, government support, and industry collaboration. The long-term a more straightforward tax structure. Policymakers and industry stakeholders can benefit greatly from this study's insightful recommendations on how to improve pharmaceutical manufacturers' operational efficiency in the GST era.

KEYWORDS: GST, Pharmaceutical Products, Pharma Manufacturers, Supply Chain Management

1. INTRODUCTION

India's tax system reached a major turning point with the implementation of the Goods and Services Tax (GST) on July 1, 2017. The tax system was made simpler with this new tax structure, which replaced several indirect taxes with a single tax. The adoption of the Goods and Services Tax (GST) has presented a number of operational issues and opportunities for the pharmaceutical industry, which is essential for the nation's health and economy. In terms of volume, Indian pharmaceutical industry is the third-largest pharmaceutical producer in the world; in terms of value, it is ranked fourteenth (PIB, 2023). Nonetheless, streamlining procedures and maintaining drug affordability are ongoing problems for the sector.

The primary objective of the GST, a major indirect tax reform, was to unify the Indian market and simplify the tax code. The pharmaceutical business may gain from the GST, but there are also new difficulties with supply chain logistics, working capital management, and compliance.

The purpose of the paper is to analyse how the Goods and Services Tax (GST) has affected pharmaceutical manufactures, with a particular emphasis on operational optimisation throughout this period. The study looks at the ways that GST has changed the pharmaceutical industry, the difficulties that they confront, and the ways that operational efficiency can be improved.

2. LITERATURE REVIEW

The purpose of the GST system was to establish a single national market and do away with the cascading impact of taxes. This resulted in adjustments to tax rates, compliance specifications, and supply chain dynamics for the pharmaceutical sector. Numerous studies have examined how the Goods and Services Tax (GST) affects various industries; nevertheless, there is a dearth of specialised research on pharmaceutical firms.

Several study works have examined the effects of GST on different Indian industries. Still, there is a dearth of studies that are devoted to the pharmaceutical sector.

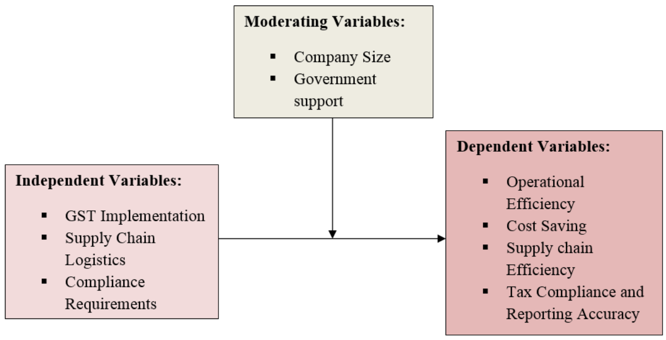
Rao & Rao (2018) examined how the Goods and Services Tax (GST) affected the price and profitability of the pharmaceutical business in India. Though they also raised concerns about higher compliance expenses, they discovered that the GST reduced the overall tax burden for several pharmaceutical products. Joshi & Sharma (2019) examined at how the GST affected the pharmaceutical industry's working capital management. According to their analysis, the GST may result in higher working capital requirements because of the requirement for new compliances and delayed input tax credits.

Distribution management is the primary means of achieving the fundamental supply chain flows, which are perceived as an opportunity to enhance information flows and operation optimisation, lower inventory levels, enhance customer service, and permit more agile distribution (Vrijhoef et Koselka, 2000). The main objective of a distribution centre is to offer a range of services that facilitate the efficient operation of other departments within an organisation by storing raw

materials, completed goods, and replacement parts required for other departments (Rita Makumbi, 2013). The logistics and operations research literature has addressed the traditional day-to-day logistics dilemma of determining the site of a distribution centre, logistics park, or warehouse in great detail (Baumol and Wolfe, 1958; Ballou, 1968; Kaufman, Vanden and Hansen, 1977).

Notwithstanding these prior investigations, a thorough examination of the entire spectrum of obstacles and prospects posed by the Goods and Services Tax (GST) for manufacturers of pharmaceuticals is lacking. Furthermore, given the short time elapsed since the GST was implemented, more research is required to determine the long-term effects on the operations of the industry.

2.1 Conceptual Framework



3. METHODOLOGY

The research style employed in this study was a qualitative multiple-case study approach. This design aims to fully explore and understand how the Goods and Services Tax (GST) applies to and impacts pharmaceutical manufacturers. The study examines a variety of businesses in an attempt to identify possibilities and challenges that contribute to a comprehensive understanding of how the implications of GST impact manufacturers' experiences and business success.

3.1 Research Objectives

The primary objective of the study is to examine how the Goods and Services Tax (GST) has affected pharmaceutical businesses, emphasising how to optimise operations. The research aims to:

- Examine the impact of GST on the pharmaceutical sector.
- Determine the difficulties that pharmaceutical producers are facing after GST.
- Evaluate methods to increase operational effectiveness in the context of GST.

3.2 Research Hypotheses

H1: The implementation of GST has a positive outcome on the operational efficiency of pharmaceutical manufacturers.

H2: GST implementation leads to significant cost savings for pharmaceutical manufacturers due to reduced tax burdens.

H3: GST implication improves supply chain efficiency for pharmaceutical companies.

H4: The relationship between GST implication and cost saving is moderated by company size.

H5: The relationship between GST implication and tax compliance and reporting accuracy is moderated by government support.

3.3 Comparison of Old Tax Rate % and GST Tax Rate for Pharmaceutical Products

Pharmaceutical goods were liable to several taxes prior to the GST, such as service tax, VAT, and excise duty. Often, the total tax burden was higher than 20%. Following the introduction of GST, the majority of pharmaceutical items fell into the 12% tax band, with certain life-saving medications subject to a 5% tax.

Product Category	Pre GST Tax Rate (%)	Post GST Tax Rate (%)
Generic Drugs	18-22	12
Branded Drugs	20-25	12
Life Saving Drugs	5-10	5
Medical Devices	12-15	12
Raw Materials	12-18	18

Table 1: Comparison of Old Tax Rate % and GST Tax Rate for Pharmaceutical Products

For the majority of pharmaceutical products, the switch to GST reduced the overall tax burden, which may have resulted in cost savings and improved operational efficiency.

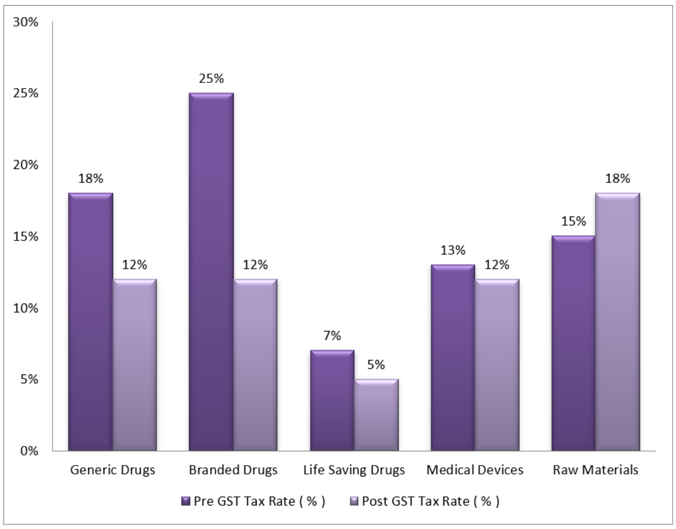


Figure 1: Comparison of Old Tax Rate % and GST Tax Rate

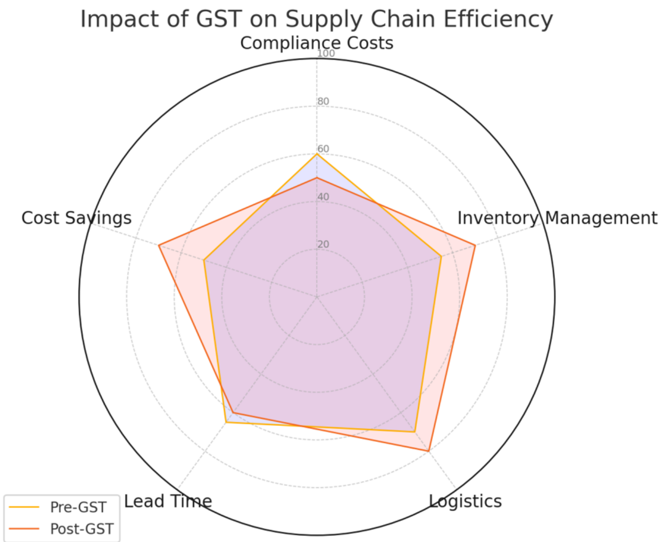


Figure 2: GST Impact on Supply Chain

Comparison of Pre GST and Post GST Tax Rates for Pharmaceutical Products:
The tax rates on different pharmaceutical goods before and after the introduction of GST are contrasted in the above bar chart. This graphic makes evident the decrease in tax rates for branded, generic, and life-saving medications while emphasising the marginal increase for raw materials.

Impact of GST on Supply Chain Efficiency:
The accompanying radar chart shows how several areas of supply chain efficiency are affected by GST. The graph contrasts lead time, cost savings, inventory management, compliance costs, and logistics between pre- and post-GST periods. While compliance costs have dropped, the post-GST measures demonstrate gains in logistics, inventory management, and cost reductions.

4. DATA ANALYSIS
Data analysis included comparing operational variables, such as inventory management, supply chain efficiency, and tax compliance costs, between pre- and post-GST periods. Utilising statistical techniques, the GST data was examined to determine the potential and frequent problems faced by pharmaceutical makers.

Graph 1: Comparing Pharmaceutical Product Tax Rates Before and After the GST.
Graph 2: Influence of GST on Supply Chain Efficiency

Below mentioned case studies show how Indian pharmaceutical companies have taken use of possibilities to streamline their operations while navigating the difficulties presented by the adoption of the GST.

Company	**Dr. Reddy's Laboratories**	**Sun Pharmaceutical Industries**	**Cipla Limited**	**Lupin Limited**
Challenges	• Redesign of systems for tax compliance and reporting • Supply chain realignment to prevent tax cascades- Educating staff members about new tax laws • Controlling the expenses of transition	• Adherence to the recently introduced GST reporting regulations • Handling interruptions in the supply chain and inventory • Teaching employees about GST procedures- Modifying pricing tactics	• Ensuring numerous sites are in compliance with GST • Managing the effect of GST on cash flow • Keeping track of more paperwork and documentation- Making adjustments to new tax credit systems	• Handling the intricacies of various product GST rates • Modifying supply chain operations to account for the new tax structure • Teaching employees on ITC and GST compliance Controlling the effect on profitability and price
Opportunity Leveraged	• Tax compliance made easier with automated systems • Technology-enhanced supply chain visibility • ERP systems were implemented to include GST compliance • Used the Input Tax Credit (ITC) to reduce expenses	• Modernised IT setup to ensure smooth GST compliance • Made use of technology to control inventory in real time • Established comprehensive training initiatives • Price optimisation to account for GST advantages	• A centralised mechanism for GST compliance • Enhanced working capital administration • Digitalized the processes for documentation • Using the Input Tax Credit (ITC) effectively	• Created a thorough system for managing GST rates • Improved logistical management and planning- Put in place comprehensive training initiatives • Updated pricing plans to comply with GST
Outcomes	• Accurate reporting and enhanced tax compliance • Less tax burden as a result of cascading taxes being eliminated. • Enhanced effectiveness of operations • Saving money with ITC	• Increased effectiveness in tax compliance • Decrease in supply chain interruptions- Skilled staff experienced in handling GST obligations • Reasonably priced after GST	• Simplified procedure for complying with GST • More effective cash flow management- Lessened administrative work • Reduced expenses and increased tax advantages	• Precise implementation of GST rates • A more efficient supply chain Employees knowledgeable on GST procedures • Preserved profitability while making sure rules were followed

Table 2: Case Study Analysis

Case Study Summary

- Dr. Reddy's Laboratories achieved increased operational efficiency and cost savings by concentrating on improving supply chain visibility and optimising tax compliance.
- Sun Pharmaceutical Industries improved inventory control and modernised its IT infrastructure, which decreased supply chain interruptions and raised prices.
- Cipla Limited streamlined working capital management and centralised its GST compliance, streamlining compliance procedures and enhancing cash flow management.
- Lupin Limited created a thorough system for managing GST rates and better logistics planning, which led to precise GST application and increased supply chain effectiveness.

5. FINDINGS AND CONCLUSION

The research showed that pharmaceutical producers face a number of issues, including increased compliance costs and supply chain disruptions, even though GST has simplified the tax system and decreased the total tax burden. Nonetheless, there are a lot of chances to optimise processes. Through the utilisation of technology and process optimisation, manufacturers can optimise their operational effectiveness and attain cost reduction.

- The GST has reduced the overall tax burden on pharmaceutical products by streamlining the tax structure and eliminating several indirect taxes in favour of a single tax.
- The necessity for new systems and procedures to handle GST reporting and compliance has resulted in increased compliance expenses for pharmaceutical firms.
- Supply chains have been disrupted by the introduction of the Goods and Services Tax (GST), requiring realignment and modifications to logistics and inventory management.
- Pharmaceutical producers can improve their operations using GST, notwithstanding the challenges. Through the implementation of cutting-edge technologies and process optimisation, businesses can realise substantial cost reductions and improve their overall operational effectiveness.
- Manufacturers have seen increased tax compliance and reporting accuracy as a result of more smoothly integrating GST compliance into their operations through the use of ERP systems and other technology solutions.
- The long-term advantages of the GST transition, notwithstanding its difficulties, include a more simplified tax system, possible cost reductions, and chances for operational advancements in the pharmaceutical sector.

Considering the fact that GST has streamlined the tax code and lessened overall tax burdens, the study found that pharmaceutical producers still have to deal with a number of challenges, such as higher compliance costs and supply chain disruptions. However, there are plenty of chances to streamline procedures. Manufacturers can reduce costs and improve operational efficiency by utilising technology and streamlining operations.

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